

REMARKS

Claims 4, 5, 7-18, 20-54, and 58-76 are pending in this application. Claims 19-73 are withdrawn from further consideration pursuant to a restriction requirement. By the present amendment, independent claims 1, 19 and 55 have been cancelled, new independent claims 74-76 have been added to replace the cancelled independent claims, and other dependent claims have been amended (shown in the Listing of Claims attached hereto) in order to more particularly and completely claim the present invention. No new matter has been introduced. Reconsideration and allowance of the pending claims is hereby requested.

New claims 75 and 76 replace previously withdrawn claims 19 and 55, respectively. Applicants respectfully request that claims 75 and 76 (and the claims depending from them) be examined with claim 74, which replaces independent claim 1 of the previously elected group of claims 1-18, in the present application. Applicants believe that new independent claims 74-76 relate to the same invention. In this, the Examiner previously stated that the process of now-cancelled claim 1 "could be carried out by hand." Office Action dated July 18, 2005 at page 2. Applicants respectfully point out that the process of new claim 74 cannot be performed by hand since the process requires acquiring sonic data at a plurality of depths in a borehole thereby requiring a receiver or other means for acquiring sonic data, as specified in new independent claims 75 and 76, respectively.

Claim 7 has been amended to correct the earlier reference to previously cancelled claim 6.

The Examiner has rejected claims 1-3 and 7-11 under 35 U.S.C. 102(b) as being anticipated by Kimball (US 5,278,805) and claims 4, 5, and 12-18 under 35 U.S.C. 103(a) as being unpatentable over Kimball in view of other cited references. Reconsideration is requested.

New independent claim 74 specifies:

"processing the acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth;

displaying the generated slowness-versus-frequency dispersion curve for each depth versus depth.”

Similar features are present in new independent claims 75 and 76.

Kimball does not process acquired sonic data to generate a slowness-versus-frequency dispersion curve for each depth. Kimball also does not display the generated slowness-versus-frequency dispersion curve versus depth.

In contrast with the present invention as claimed in claims 74-76, Kimball uses model dispersion curves to backpropagate Fourier transformed data signals so that “a [model] dispersion curve which most closely matches the actual dispersion curve of the formation is found.” [Emphasis added.] See Kimball at column 9, lines 56-65. As is clear from the description in Kimball, the processing of Kimball does not generate a slowness-versus-frequency dispersion curve for each depth from acquired sonic data, but Kimball’s processing uses previously stored model dispersion curves. See also Kimball at column 12, line 65, to column 13, line 11.

Kimball also fails to disclose or suggest “displaying the generated slowness-versus-frequency dispersion curve for each depth versus depth,” as specified in instant claims 74-76. In Figure 6 of Kimball, which was referred to by the Examiner in the final Office Action, the final results of Kimball’s processing in Figures 3A and 3B, i.e., the formation shear slowness, over depth are displayed. Figure 6 of Kimball does not disclose displaying the generated slowness-versus-frequency dispersion curve for each depth versus depth. See Kimball at column 15, lines 3-6.

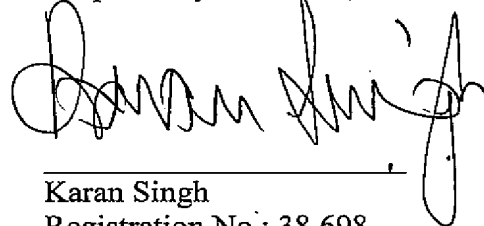
As shown in, for example, Figures 4A-4F, 5A-5C, and 6A-6D (and further described in the accompanying text), the present invention contemplates generating slowness-versus-frequency dispersion curves from acquired sonic data and displaying the generated slowness-versus-frequency dispersion curves versus depth. As a consequence, significant improvements and advantages over conventional methods of displaying sonic logging data are obtained.

For the reasons discussed above, the prior art of record does not disclose or suggest the features claimed in instant claims 74-76. Therefore, independent claims 74-76 should be allowable and the claims depending from independent claims 74-76 also should be allowable for at least the same reasons as stated above.

In light of the above remarks, applicants believe that the present application and claims 4, 5, 7-18, 20-36, 58-61, and 74-76 are in proper condition for allowance. Such allowance is earnestly requested.

In the event that any additional fees or credits are due owing to this response, the Commissioner is hereby authorized to charge the amount necessary to cover any fee that may be due or to credit any overpayment to Deposit Account 50-1122.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Karan Singh', is written over a horizontal line.

Karan Singh
Registration No.: 38,698

Date: 09 November 2006
Schlumberger K.K.
2-2-1 Fuchinobe
Sagamihara-shi, Kanagawa-ken
229-0006 Japan

81-42-759-5202
81-42-753-7649(fax)